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## ABSTRACT

The present invention relates to a method for visually detecting and tracking an object through a space. The method chooses modules for a restricting a search function within the space to regions with a high probability of significant change, the search function operating on images supplied by a camera. The method also derives statistical models for errors, including quantifying an indexing step performed by an indexing module, and tuning system parameters. Further the method applies a likelihood model for candidate hypothesis evaluation and object parameters estimation for locating the object.